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O'Keefe outlines NASA's approach to return to flight

An enthusiastic, standing-room-only crowd gave NASA Administrator Sean O'Keefe a warm welcome at a recent all-hands meeting at Ames. O'Keefe used the occasion to discuss the agency's plans for 'Return to Flight' and to tout the leadership skills of Ames' senior management, including those of incoming Deputy Director G. Allen Flynt.

NASA photo by Dominic Hart

NASA Administrator Sean O'Keefe answers a question at the conclusion of his presentation on July 17.

Ames Center Director G. Scott Hubbard introduced the Administrator and observed, "It is extremely important that we do everything we can as an agency, as one NASA, to return to flight and address all the issues . . . so we can do that safely."

"We have been asked to explore and discover on behalf of the American people," said O'Keefe in describing NASA's mandate. "That's a pretty hefty responsibility, but also a pretty wide-open challenge to do things very creatively. It's a remarkable charter. It's one that gives us a tremendous license to do some absolutely fascinating things."

O'Keefe noted that over the course of NASA's 45-year history, the "agency has been defined by its unbelievable, stunning successes and its really horrific and deeply tragic losses." This is the definition of what exploration and discovery are all about, he said.

On the morning of Feb. 1, O'Keefe was at Kennedy Space Center, awaiting the return of Columbia from its 16-day science mission, when he learned of the loss. "It was a moment in my life I will never, ever forget . . . a defining moment for all of us," he remarked.

As NASA struggled to come to grips with the tragedy, there were "some amazing, stunning, inspirational aspects to this that no one could ever have anticipated," said O'Keefe. "People stepped in and did things that even they may not have thought they were capable of doing," O'Keefe said. He praised those who responded for "their continued professionalism" in carrying out the agency's charter and doing what was necessary.

O'Keefe praised Hubbard, acknowledging "his performance and dedication to the effort as a member of the Columbia Accident Investigation Board (CAIB). You've done an amazing job," he said. O'Keefe asked Hubbard to serve on the board just a few hours after the disaster and the CAIB held its first discussions within eight hours of the loss of Columbia.

Hubbard was chosen "because of his past experiences with a range of other challenges this agency has confronted," O'Keefe said. "He was an obvious, natural choice." O'Keefe acknowledged that Hubbard's absence just a few months after being named Ames' director created a leadership challenge at Ames. "His contributions have been enormous,

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Space directors meet the media

NASA photo by Eric James

NASA Administrator Sean O'Keefe (center) and other international space agency chiefs discussed space station operations and return to flight during a news conference July 29 at the Naval Postgraduate School in Monterey, Calif. Joining O'Keefe were (from left): Savi Sachdev, director general for space systems of the Canadian Space Agency; Shuichiro Yamanouchi, president of the National Space Development Agency (NASDA) of Japan; Jean-Jacques Dordain, director general of the European Space Agency; and Yuri Koptev, general director of the Russian Aviation and Space Agency (Rosaviakosmos).

F2M makes it easier to travel

The NASA Freedom to Manage (F2M) task team has identified an existing solution to make travel easier for Ames employees.

The F2M task team visited Ames in November of last year and held a town hall meeting. During the meeting, an Ames employee commented that travel to professional conferences was difficult because of budget constraints.

In the past, if funding for a trip was not available, an employee could choose to pay his or her own way and attend in a personal capacity. However, then the employee would not be able to present a paper or serve on a panel because technically they would not be 'representing NASA' at that conference.

After looking into this request, the

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Students tackle West Nile virus and invasive plant research

Two student researcher teams at NASA Ames are working to prevent the spread of West Nile Virus and foreign weed growth this summer, thanks to a new educational program called DEVELOP.'

Started in 1998 at Langley Research Center, DEVELOP stands for Digital Earth Virtual Environment and Learning Outreach Project. Former Vice President Al Gore began the program, whose goal of which is to give students hands-on experience with immersive visualization technology.

NASA photo courtesy DEVELOP Team

DEVELOP students Elizabeth Ballif and Emily Clary check standing water for mosquito larvae in Salinas, California.

Nine students are working on a West Nile Virus preventive study in Monterey County and a study of invasive plant species (weeds) on a Native American reservation in Pyramid Lake, Nev. The state-of-the-art, remote-sensing technology they are applying uses satellite and aircraft images to deduce surface conditions quickly and cost effectively. Most students never use it until graduate school, a fact that attracted many of the students to the program. But the prestige associated with NASA didn't hurt either.

"Of course, to work with NASA is a big thing," said Elizabeth Ballif, an undergraduate student at the University of Utah. "It's technology I haven't worked with, but they said they'd train me. So I said, 'Get trained by NASA? Sure, sign me up!'"

Three high school, three undergraduate and three graduate students make up the program. Jay Skiles, NASA Ames' senior research scientist, is the program director and Cindy Schmidt of California State University is the program coordinator.

Using the Eastern Range Dispersion Assessment System (ERDAS) Imagine software, the two student teams use satellite imaging to geographically identify target areas in their projects.

The first team is working with the Monterey County Health Department monitoring vector-borne diseases, namely the West Nile virus. The satellite technology helps the students identify areas in the county where a West Nile carrier, the Culex mosquito, is likely to live.

"We can't identify individual bodies of water at this resolution," Emily Clary, a graduate student at the University of New Mexico, said of the software. "So we look for high vegetation levels, which will likely be an area with a lot of water."

The students also go into the field to identify the mosquito species in select areas. Once the data is collected, Baliff will combine their findings with demographic data.

"The elderly are high-risk (for fatally contracting the disease)," Baliff said. "I'm looking for assisted living, nursing homes, even golf courses -- places where the elderly are likely to be."

Once the study is completed, the students will hand over their findings to the Monterey County Health Department so that it can prepare for and prevent the West Nile Virus from inhabiting the identified high-risk areas.

The second student team is working on an invasive plant species management system with the Pyramid Lake Paiute Tribe in Nevada. Skiles and Schmidt selected this project because of the potential to build a relationship between the two organizations.

"Whenever a government agency can work with a tribal council, that rings bells," Skiles said.

The team visited the reservation, that, since a 1997 flood, has had an increase in weed growth. One of the main species they will target is the tall white top, a plant native to the Mediterranean region.

Based on their plant identifications on the ground, the students will use satellite images to identify the spectral 'fingerprint' of the plant they found in that area. Then, they will single out other nearby regions using the images where that same fingerprint appears. This means the same plant is in those regions as well.

"Different weeds have different reflection properties," explained Jeremiah Knoche, an Oregon State University graduate student. "By comparing different reflective bands, we can identify the different species."

Once their research is complete, the students will create a database for the tribal council to use.

"The Paiute tribe is looking for a way to document where the weeds have historically been and where they can go," said Douglas Gibbons, a Utah State University graduate student. "Our ultimate goal is to provide them with the necessary information they need to make management decisions, like how much cattle can graze in an area or pesticide control. It's helping them know what to do with their land."

The projects are giving the students valuable experience using up-to-date software, as well as true leadership and independence. The DEVELOP program motto is 'student run, student led,' so Skiles and Schmidt help only when necessary.

"I'm totally excited about this," said Alex Hogle, an undergrad at the University of Utah. "I'm hoping to go back to Utah and apply what I have learned here."

Lakshmi Karra, a student from Gunn High School in Palo Alto, said that she is also excited because the team is doing service for the community.

"I think the ecosystem gets overlooked sometimes, but it's a very important area of study," she said.

The students were chosen on application processes. The high school students filled out applications and Skiles and Schmidt did subsequent interviews. The college students applied through their state governors. Skiles said the program is going well so far.

"The students are so exciting to work with," he said. "They think outside the box, and it's a real two-way street."

BY ALISON MARTIN